

Patent Abstracts of Japan

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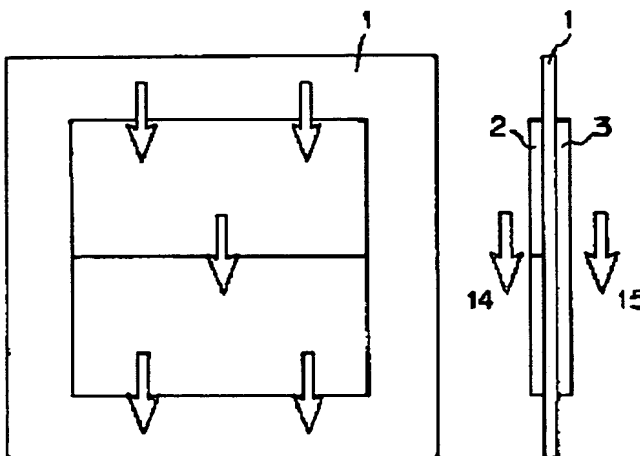
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APPLICATION NUMBER : 09318477

APPLICANT : FUJI ELECTRIC CO LTD;

INVENTOR : ENAMI YOSHIKI;

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TITLE : CELL AND STACK OF SOLID
POLYMER ELECTROLYTE FUEL CELL



ABSTRACT : PROBLEM TO BE SOLVED: To prevent degradation of battery performance due to partial drying of an electrolytic membrane or excessive electrode leakage by a part close to a gas supply port side of a gas transmission layer of an anode and/or cathode having permeability smaller than the part close to a gas exhaust port side.

SOLUTION: A gas transmission layer 2 on a cathode side is composed of a material with its different porosity. That is, at a part close to an supply port for air that is an oxidizer, a gas transmission layer 2 is made of carbon paper to increase thickness, and the porosity is decreased to lower gas permeability. At a part close to an air exhaust port, the gas transmission layer 2 made of like carbon paper, and however, thickness is reduced, the porosity is increased, and gas permeability is increased. Thereby, gas transmission inhibit due to water at a humid water exhaust exit side generated by reaction never occurs.

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diffusion layer
upstream - lower porosity (same as d. 9)
downstream - thickness reduced (opposite of d. 10)